

A NEW GENUS AND SPECIES OF EMPIDIDAE FROM CHINA (DIPTERA, EMPIDOIDEA)

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Abstract A new genus and species of Empididae from China are described *Sinohilara shennongana* gen. et sp. nov.

Key words Diptera, Empididae, *Sinohilara*, new genus, new species, China

The higher classification of the superfamily Empidoidea has been debated. According to the recent studies made by Yang *et al.* (2007), the monophyly of dance flies Empididae is confirmed and Empidoidea is divided into two families Empididae and Dolichopodidae.

The monophyly of dance flies Empididae is well supported by the following 8 synapomorphies (Yang *et al.*, 2007).

(1) Head rather small, narrower than thorax in dorsal view. In other Orthorrhapha, the head is rather large, never narrower than thorax in dorsal view. The head in Acroceridae is also small, obviously this state is not homologous.

(2) Head nearly spherical (nearly as long as high). In other Orthorrhapha including Acroceridae, the head is hemispherical (distinctly higher than long).

(3) Occiput well developed, rather convex backward. In other Orthorrhapha, the occiput is weak or indistinct, nearly truncate.

(4) Eyes with an angular inner incision near antennae. In other Orthorrhapha, the eyes have no inner incision.

(5) Thorax humpbacked. The thorax in Hemerodrominae is secondary flat dorsally, as the thorax is elongated. In other Orthorrhapha, the thorax is not humpbacked. The thorax in Acroceridae is humpbacked, obviously this state is not homologous.

(6) Epandrium with a very deep and large mid-posterior incision, even left and right hemitergites sometimes completely separated. In other Orthorrhapha, the epandrium has a weak or indistinct mid-posterior incision.

(7) Male cerci located at base of epandrium. In other Orthorrhapha, male cerci are located at apex of the epandrium.

(8) Hypandrium rather large and broad as an independent structure as well as a ventral cover of the hypopygium. In other Orthorrhapha, the hypandrium is small or reduced as an appendage attached to (or fused with) the gonocoxites or epandrium.

In the present paper, a new genus *Sinohilara* gen. nov., is described from China. It belongs to the tribe Hilarini of the family Empididae and is closely related with the genus *Hilara* Meigen.

Now it includes only one species *Sinohilara shennongana* sp. nov. The types are deposited in the Entomological Museum of China Agricultural University (CAU), Beijing. The following abbreviations are used: *ac* = acrostichal, *ad* = anterodorsal, *av* = anteroventral, *C* = costal, *d* = dorsal, *dc* = dorsocentral, *h* = humeral, *npl* = notopleural, *oc* = ocellar, *pd* = posterodorsal, *presc* = prescutellar, *psa* = postalar, *pv* = posteroventral, *sa* = supraalar, *sc* = scutellar, *v* = ventral.

Sinohilara gen. nov.

Diagnosis Bristles on body well developed. Head slightly higher than long. Eyes separated on frons and face, frons slightly widened toward vertex, face slightly narrower than frons. Frons with one row of orbital hairs including 2 long uppermost bristles, *oc* very long and outcurved. Antennal scape and pedicel short, subequal in length, scape with dorsal hairs, pedicel short with circle of apical bristles, first flagellomere long conical, style 2-segmented with very short basal segment. Proboscis nearly as long as head height. Episternum haired. Laterotergite bare. Wing with large anal lobe, axillary angle nearly rectangular, *C* surrounding wing margin, *sc* complete, apically reaching *C*; *R*₁ distinctly thickened apically; *R*_s short, somewhat close to *h*; *R*₄₊₅ furcated, *R*₅ ending at wing tip; basal cells slightly long, anal cell slightly narrower and shorter than second basal cell, discal cell

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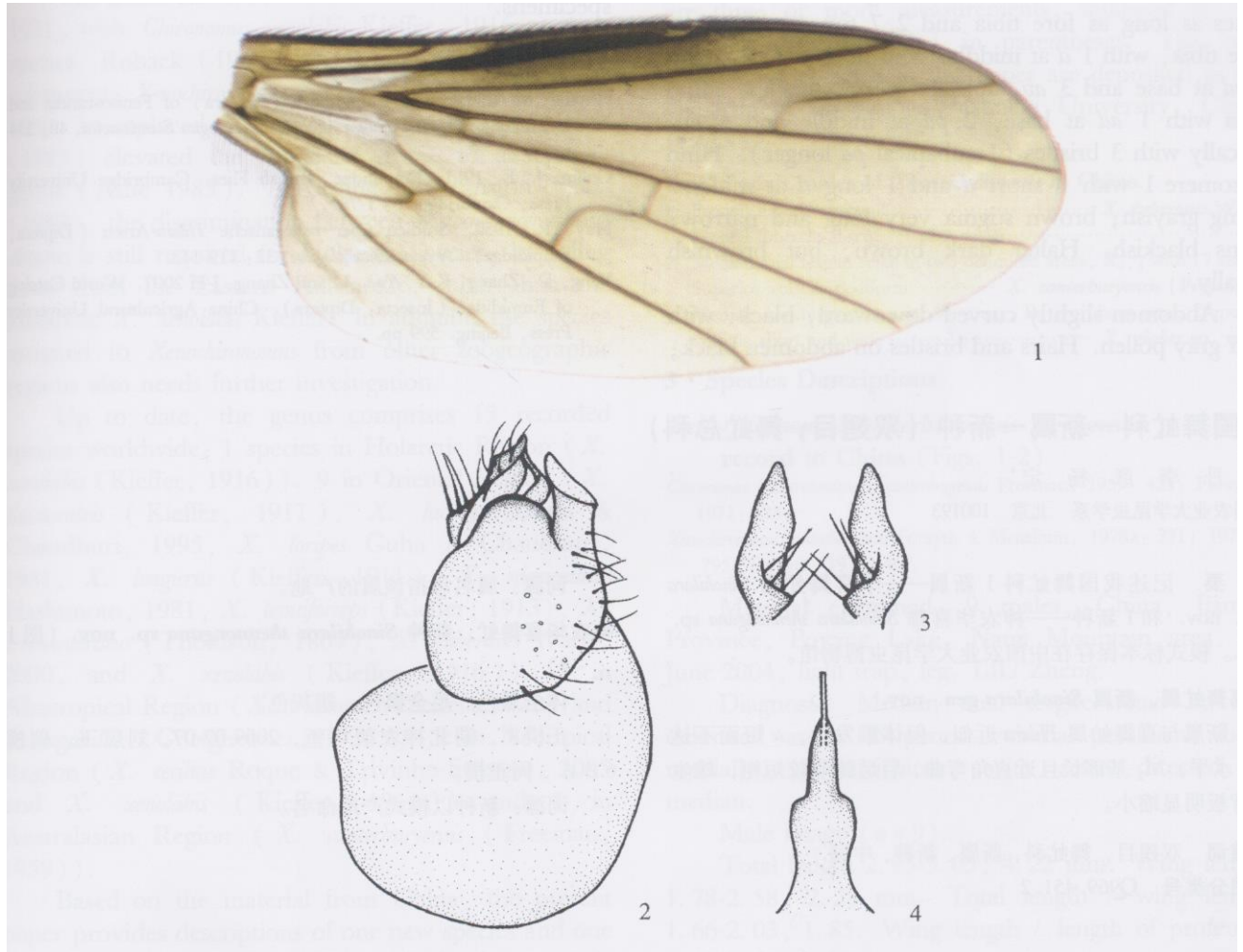
large and wide, with three veins reaching wing margin; basal portion of M_2 long and nearly rectangular; anal vein distinct but apically reduced and not reaching wing posterior margin. Hind femur rather short, slightly thickened. Male fore tarsomere 1 thickened with strong bristle; hind tarsomere 1 with dorsal bristles. Male genitalia: epandrium relatively small with apico-lateral process obliquely truncate apically; hypandrium well developed.

Type species *Sinohilara shennongana* Zhou, Li et Yang sp. nov.

Remarks *Sinohilara* is similar to *Hilara*, but it may be separated from the latter by the body with the well

developed bristles, *sc* short and distant from the level of *rm*, basal portion of M_2 long and curved at a rectangular angle, and hind femur rather short and slightly thickened. In *Hilara*, the body has the relatively weak bristles, *sc* is long and close to the level of *rm*, the basal portion of M_2 is short and curved gently, and the hind femur is long and some narrow (Frey, 1952; Collin, 1961; Chvála, 2005). This new genus is distributed in Oriental China with 1 species.

Etymology. The generic name refers to its distribution in China. Gender is feminine.



Figs 1-4. *Sinohilara shennongana* sp. nov. (male). 1. Wing. 2. Genitalia, lateral view. 3. Cerci, dorsal view. 4. Apex of hypandrium, posterior view.

Sinohilara shennongana sp. nov. (Figs 1-4)

Male. Body length 3.4-3.7 mm, wing length 3.0-3.2 mm.

Head black with gray pollen. Eyes brownish, distinctly separated on frons and face. Hairs and bristles on head black. Ocellar tubercle weak with 2 very long *oc* and 6 short posterior hairs. Frons with one row of 5 orbital hairs including 1 long bristle;

uppermost bristle also somewhat long. Antenna black; scape with dorsal hairs; pedicel with circlet of black apical hairs; first flagellomere long conical, 2.1 times longer than wide; style black, as long as first flagellomere. Proboscis 0.9 times as long as head height, blackish with black spine-like process with black hairs; palpus blackish with black hairs and bristles and with 3 long *v* (1 subapical *v* longest).

Thorax black with gray pollen. Hairs and bristles on thorax black. Pronotum with 1 long lateral bristle; episternum short haired. 1 long *h*, 3 long *np*, *acr* and *dc* subequal in length except 1 posterior most *dc* longer; *acr* more or less quadriseriate; 1 long *s*, 1 long *ps*, 2 long paired *pres* (one pair close to scutellum and widely separated, one pair distant from scutellum and somewhat convergent); scutellum with two pairs of long *sc*. Legs entirely black with strong bristles. Hairs and bristles on legs black. Fore and mid femora each with 1 long *pv* at apex; mid femur with a row of 5-6 *ad*; hind femur with one row of 4 long *av*. Fore tibia with 3-4 strong *ad*, apically with 4 bristles (1 *ad* and 1 *pd* strong). Fore tarsomere 1 large and thick, 0.7 times as long as fore tibia and 2.7 times wider than fore tibia with 1 *d* at middle. Mid tibia with 1 *ad* and 1 *pd* at base and 3 *av*, apically with 3 bristles. Hind tibia with 1 *ad* at base, 2 *pd* at middle and 4 *av*, apically with 3 bristles (1 subapical *pd* longer). Hind tarsomere 1 with 1 short *d* and 1 long *d* at middle. Wing grayish brown, stigma very long and narrow; veins blackish. Halter dark brown but brownish basally.

Abdomen slightly curved downward, black with thin gray pollen. Hairs and bristles on abdomen black;

tergites 1-6 each with long strong marginal bristles. Male genitalia (Figs. 2-4): Left and right epandrial lobes relatively small with apico-lateral process obliquely truncate apically; cercus bent with acute apex; hypandrium well developed with constricted apex.

Holotype ♂, Hubei Shennongjia Pingqian, 7 July 2009, LU Qi-Fei. Paratypes 6 males, same data as holotype.

Etymology. The specific name refers to the type locality Shennongjia.

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REFERENCES

- Chvála M. 2005. The Empidoidea (Diptera) of Fennoscandia and Denmark. IV. genus *Hilara*. *Fauna Entomologica Scandinavica*, 40: 234 pp.
- Collin J. E. 1961. Empididae. British Flies. Cambridge University Press, Cambridge. 61-782.
- Frey R. 1952. Studien über ostasiatische *Hilara*-Arten (Diptera Empididae). *Notulae Entomologicae*, 32: 119-143.
- Yang D., Zhang K.-Y., Yao G. and Zhang J.-H. 2007. World Catalog of Empididae (Insecta: Diptera). China Agricultural University Press, Beijing. 599 pp.

中国舞虻科一新属一新种 (双翅目, 舞虻总科)

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摘要 记述我国舞虻科 1 新属——华喜舞虻属 *Sinohilara* gen. nov. 和 1 新种——神农华喜舞 *Sinohilara shennongana* sp. nov. 模式标本保存在中国农业大学昆虫博物馆。

华喜舞虻属, 新属 *Sinohilara* gen. nov.

新属与喜舞虻属 *Hilara* 近似, 但体鬃发达, *s* 短而不达 *r*_m 水平, *M*₂ 基部长且近直角弯曲, 后足腿节较短粗, 雄生殖背板明显缩小。

关键词 双翅目, 舞虻科, 新属, 新种, 中国.

中图分类号 Q969.451.2

词源: 属名意指该属的产地。

神农华喜舞虻, 新种 *Sinohilara shennongana* sp. nov. (图 1~4)

体全黑色。足全黑色。翅灰色。

正模 ♂, 湖北神农架坪壩, 2009-07-07, 刘启飞。副模 6 ♂ ♂, 同正模。

词源: 新种以模式产地命名。

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